ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to	)	
Encourage Innovation in the	)	ET Docket No. 92-9
Use of New Telecommunications	)	
Technologies	)	

To: The Commission

COMMENTS OF ADVANCED MOBILECOMM, INC.

Advanced MobileComm, Inc. ("AMI"), pursuant to Section 1.415 of the Commission's Rules, hereby respectfully comments on the Notice of Proposed Rulemaking, 7 FCC Rcd 1542 (1992) ("NPRM") in the above-captioned proceeding. By that NPRM, the Commission has proposed to reallocate the 1.85-1.99, 2.11-2.15 and 2.16-2.20 GHz bands to establish a spectrum reserve to accommodate emerging communications technologies, including Personal Communications Services ("PCS").[1]

I. STATEMENT OF INTEREST

AMI, and its affiliates, have been actively involved in the provision of both mobile and fixed telecommunications services throughout the United States.[2] AMI is one of the

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[1]By Public Notice, DA 92-398 (April 1, 1992), the Commission extended the dates for filing comments and reply comments in this proceeding to June 5 and July 6, 1992, respectively.

[2]AMI's ultimate parent company, FMR Corp., is the nation's largest privately-owned investment management organization. FMR Corp., together with its subsidiaries (collectively "Fidelity Investments"), provides investment, management and shareholder

largest providers of Specialized Mobile Radio services in the nation, operating regional SMR systems, and supporting sales and service operations, throughout New England; Raleigh/Durham, North Carolina; Minneapolis/St. Paul, Minnesota; Dallas/Ft. Worth, Texas; Denver, Colorado; and Las Vegas, Nevada, among other locations. In this capacity, AMI has participated extensively in the research, development and deployment of emerging mobile telecommunications technologies, including digital SMR services at 800 MHz, narrowband land mobile services at 220-222 MHz and trunked mobile services below 800 MHz.[3]

AMI's sister company, Advanced MobileComm Technologies, Inc. ("AMT"), likewise has undertaken substantial research and development efforts looking toward the implementation of a U.S. PCS service. To this end, AMT holds experimental licenses to conduct PCS tests in the Boston, Massachusetts and Miami, Florida areas.[4] Based on these experiments and on the joint research and

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services for retail and institutional investors; provides discount brokerage services; manages and develops real estate; and invests in emerging businesses. In conjunction with these activities, Fidelity Investments manages and operates an extensive telecommunications system consisting of leased lines, private microwave systems, private fiber optic systems and sophisticated voice and data switching centers that link its customer service centers and individual customers on a nationwide basis.

[3]See Request of Mobile Radio New England To Implement Advanced SMR Services (October 28, 1991); Reply Comments of Advanced MobileComm, Inc., PR Docket 91-170 (March 16, 1992); Use of the 220-222 MHz Band By Private Land Mobile Radio Services, 6 FCC Rcd 2356, 68 RR 2d 1654 (1991).

[4]See Reports of Advanced MobileComm Technologies, Inc., Operation of Experimental Systems KC2XIY and KC2XIZ, January 25, 1991; April 10, 1991; July 12, 1991; and January 22, 1992.

development efforts of AMT and its research partner, Digital Spread Spectrum Technologies, Inc. ("DSST"), AMT has requested a pioneer's preference for a PCS license to serve the Boston, Massachusetts area.[5]

As strong proponents of the development and deployment of emerging telecommunications technologies, AMI commends the Commission for its leadership in this area, not only through issuance of the instant NPRM, but also through its efforts in the on-going PCS proceeding (General Docket 90-314), the pioneer's preference proceeding (General Docket 90-217) and a host of other dockets initiated over the past several years. AMI, indeed, shares the Commission's view that the timely deployment of these emerging technologies is critical to maintaining and enhancing the competitiveness of the U.S. economy in the world marketplace. AMI is thus pleased to have the opportunity to submit these Comments in support of the NPRM.

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[5]AMT requested a pioneer's preference for the Boston area, and DSST (through its parent CYLINK Corporation) requested a pioneer's preference for a PCS license to serve the San Francisco, California area in their Request For Pioneer's Preference submitted on May 1, 1992 in General Docket No. 90-314. See Public Notice, Mimeo 23063 (May 11, 1992). AMT's and CYLINK's Request was based upon their proposal to provide PCS employing Synchronous Code Division Multiple Access ("S-CDMA")/ Frequency Division Multiple Access ("FDMA")/ Time Division Duplexing ("TDD") technology in a microcellular architecture. Notably, AMT and CYLINK stated their preference in their Request for spectrum in the 1.8-2.2 GHz band, exactly that proposed by the Commission in the NPRM for PCS in this proceeding. The AMT/CYLINK Request is incorporated by reference to these Comments.

II. ESTABLISHMENT OF AN EMERGING TECHNOLOGIES BAND WOULD SERVE THE PUBLIC INTEREST

In its NPRM (at paras. 4-8), the Commission cited a multitude of emerging telecommunications technologies that have requested spectrum allocations for widespread deployment, among them PCS, digital audio broadcasting ("DAB"), mobile satellite service ("MSS") and low-earth orbit satellite services ("LEO"). Yet, the Commission noted that despite the promise of these and other technologies, the lack of available spectrum has resulted in an "environment in which new services are vying with each other and with existing users for relatively small slivers of spectrum that are incapable of supporting full implementation of new service." Id. For these reasons, the Commission recognized a need for the emerging technologies band proposed in the NPRM.

AMI agrees that the amount of spectrum currently available to accommodate promising emerging technologies is clearly inadequate. Indeed, existing spectrum requests from just the emerging technologies cited by the Commission total in excess of 370 MHz.[6] And, given the accelerating pace of technological development in the telecommunications and information industries, other meritorious spectrum-dependent services will continue to emerge. In AMI's view, the need for the emerging technologies band proposed in the NPRM to provide entrepreneurs the necessary incentives to continue to research, develop and deploy these emerging technologies that have made the Information Age a

[6]See AMT/CYLINK Request For Pioneer's Preference in Gen. Docket 90-314, Appendix C (May 1, 1992).

reality is clear and convincing.[7]

III. THE 1.85-2.2 GHz BAND IS IDEAL FOR THE EMERGING TECHNOLOGIES RESERVE BAND

In the Report that culminated in the issuance of the NPRM, the Commission examined the candidate frequency bands for location of an emerging technologies spectrum reserve. After consideration of a multitude of factors, including the existing uses of the candidate bands, alternatives for relocating those users to other bands and expected equipment costs of lightweight and portable electronic components, the Commission identified 220 MHz of spectrum between 1.85 and 2.2 GHz as the ideal location of the emerging technologies band, 1.85-1.99, 2.11-2.15 and 2.16-2.20 GHz. NPRM at para. 19.[8]

AMI concurs with the designation of these sub-bands totalling 220 MHz between 1.85 and 2.2 GHz as the ideal home for the emerging technologies band. Given the current state-of-the-art in equipment and service technology and the propagation

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[7]In the NPRM (at n. 10), the Commission noted that existing spectrum requests exceed by a substantial degree the 220 MHz proposed for the emerging technologies band. In AMI's view, the creation of that band as proposed by the Commission is a critical step towards accommodating the spectrum needs of promising emerging technologies. As noted by the Commission, however, other efforts must also continue to accommodate the new technologies, including the on-going dialogue between the Government and the private sector looking toward increased private sector access to Government-allocated spectrum. AMI commends the Commission for its continued leadership on these fronts as well.

[8]See "Creating New Technology Bands for Emerging Telecommunications Technology," FCC/OET TS92-1 (January, 1992).

characteristics of those sub-bands, AMI believes that allocation of PCS in these sub-bands will enable the deployment of lightweight, portable and affordable hand-held units. These bands are, moreover, consistent with international allocations for PCS and PCS-like services, which, in turn, will further international equipment compatibility and will enhance the competitive posture of U.S. manufacturers competing in worldwide markets.[9]

The selection, in particular, of the 1.85-1.99, 2.11-2.15 and 2.16-2.20 GHz sub-bands, now populated by point-to-point microwave users, will serve the public interest. In AMI's view, the Commission correctly proposed to relocate these fixed service users to higher frequency bands already allocated for these services, and in which equipment is currently available.[10] Indeed, given the fixed nature of point-to-point usage and the declining costs of fiber optics, relocated fixed service users may well opt for the most spectrum efficient solution of all--i.e., migrating their fixed telecommunications needs to fiber links. In any event, it is clear that the existing point-to-point users in these candidate bands will have a variety of

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[9]In the NPRM (at para. 10), the Commission noted the desirability of compatibility of U.S. spectrum allocations with international allocations.

[10] The Commission's choice of the 2 GHz microwave bands is particularly appropriate from an interference management perspective. The high-gain antennas employed by the microwave systems restrict the transmission and reception of signal energy to rather well-defined, and fixed corridors which, in turn, minimizes interference management problems in a spectrum sharing environment.

service options to accommodate their needs.

AMI recognizes, of course, that the needs of the existing users of these bands must be accommodated, and that the reallocation of this spectrum must, therefore, be accomplished in a manner that minimizes the disruption of service to these users and maximizes their alternative service options.[11] In this respect, AMI believes that a transition plan of the nature proposed by the Commission (NPRM at paras. 22-27) is well-suited to this task.

In particular, by authorizing the immediate co-primary sharing of the spectrum with an emerging technology licensee, the Commission will maximize the use of the existing spectrum consistent with sound interference management. At the same time, by setting a fair "sunset" for the point-to-point microwave use of these sub-bands, the Commission will enable the microwave

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[11]As set forth in their Request For Pioneer's Preference (at 13-23), the AMT/CYLINK proposal for PCS employing S-CDMA/FDMA/TDD technology in a microcellular architecture would function uniquely well in managing and minimizing interference issues with co-primary microwave licensees during the transition period. To this end, unlike other CDMA architectures, S-CDMA employs orthogonal spreading codes and chip-level synchronization. This allows the actual over-the-air transmitted signals to be orthogonal to each other, and thus minimizes intra-cell interference between mobile units under the control of a common base station. This reduced intra-cell interference, in turn, increases the PCS provider's system flexibility in managing inter-cell or inter-system interference, and thus in coordinating frequency usage with co-primary licensees. Moreover, the 5 MHz FDMA overlay in the 1.85-1.99 GHz band suggested by AMT and CYLINK (Request at 17-19) enhances the benefits of S-CDMA by maximizing the likelihood of identifying a non-interfering PCS channel. Finally, the use of TDD, which does not require the use of paired frequency channels, will further enhance the PCS providers flexibility in identifying a non-interfering TDD channel in the mostly-paired channel microwave environment.

users therein to fully depreciate all reasonable capital investment in their equipment.[12] And, by permitting existing users to transfer their license rights prior to the sunset, the Commission has provided both the incentive and the means for those users to timely migrate to other communications media. Indeed, this reliance on marketplace forces should operate to ensure that this spectrum attains its highest-valued use.

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[12]In the NPRM (at n. 20), the Commission inquired on the possibility of "windfalls" to the incumbent 2 GHz licensees from market-based negotiations. In AMI's view, arm's length negotiations between a prospective new service provider and an incumbent licensee should result in fair market value transactions, provided that the sunset established by the Commission on the use of the reallocated sub-bands by the microwave licensees provides a real incentive to the licensees to migrate to other bands. For this reason, AMI believes that a ten year sunset term provides a reasonable balance of the equities between existing and prospective users. The fifteen year term referenced as a possible alternative by the NPRM (at para. 24) would, in AMI's view, simply provide too little incentive to the existing users to engage in timely negotiations, and would likely impede the timely introduction of promising new technologies. In any event, to ensure that these market-based transactions function as intended, AMI urges the Commission to make clear that it will retain the jurisdiction to revisit these issues if the introduction of the emerging technologies appears to be unreasonably delayed by difficulties in commencing meaningful negotiations with the existing users.

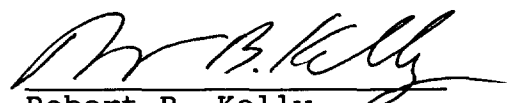
IV. PCS IS AN IDEAL FIRST USE OF THE EMERGING TECHNOLOGIES BAND

In its NPRM (at para. 29), the Commission stated its intention to proceed with a Notice of Proposed Rulemaking in its PCS Docket, and suggested that PCS would be the "first use" of the emerging technologies band. Although AMI recognizes that the Commission is considering multiple service proposals that ultimately may receive an allocation in the emerging technologies band, AMI shares the view that PCS should be accorded top priority by the Commission and receive the "first use" of the new band. The public interest benefits of a PCS allocation have been thoroughly documented in the PCS inquiry and by the numerous experimental systems now operational throughout the nation. That extensive record, AMI believes, fully warrants the top priority assigned PCS by the Commission.

V. CONCLUSION

For the above stated reasons, and for those expressed in the AMT/CYLINK Request For A Pioneer's Preference in Docket 90-314, AMI fully supports the Commission's initiative in proposing the establishment of an emerging technologies reserve band in the 1.85-1.99, 2.11-2.15 and 2.16-2.20 GHz bands.

Respectfully submitted,
ADVANCED MOBILECOMM, INC.

By: 
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